The thesis is dealing with spectral analysis of the B[e] star FS CMa, a prototype of FS CMa stars group. These objects are characterized by huge amount of matter in sourrounding shell which origin is not explained for many years. However, solving this issue could enrich stellar astrophysics by enhanced stellar evolution models. The goal of this thesis is to improve our understanding of FS CMa. We described spectral variability on various time scales and simulated spectra for different forms of the system in HDUST code. On the basis of new obtained spectra we confirmed long-term changes in variability of some spectral features and rapid variability of some spectral lines. We gained an estimate of the gas density. The simulations showed that spectral type of FS CMa is not certain and that the star could be surrounded by extended disk, many stellar radii wide.